Small Business Innovation Research/Small Business Tech Transfer

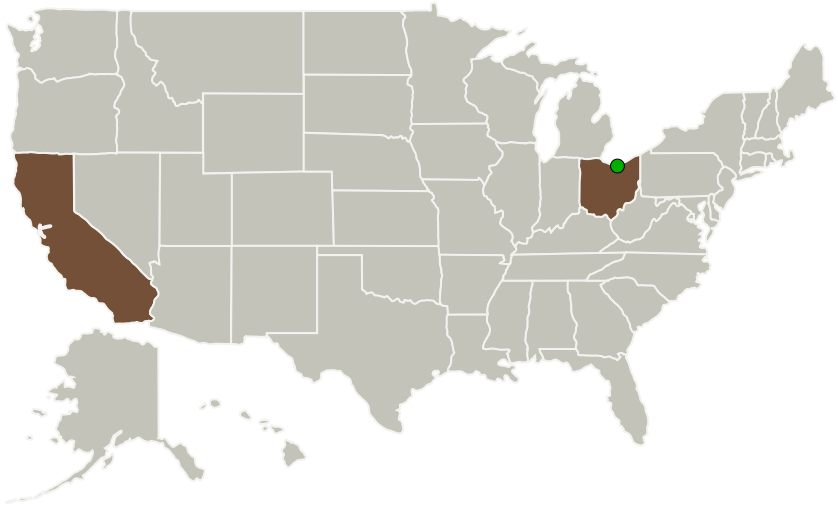
Mission-Enabling Photovoltaic Flexible Blanket Solar Array with SNC/SJ Surface Mount Technology, Phase I

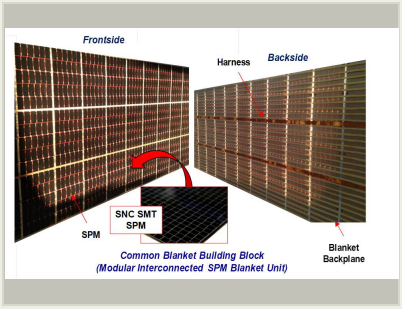
Completed Technology Project (2017 - 2017)

Project Introduction

Deployable Space Systems, Inc. (DSS) in collaboration with Sierra Nevada Corporation (SNC) has developed a modular multi-junction photovoltaic flexible blanket technology that uses innovative Surface Mount Technology (SMT) photovoltaic SPM's that enable/enhance the ability to provide ultra-low cost, low mass, modularity, and reliable operation for high power arrays to support solar future NASA Human Exploration and Space Science missions. The proposed multi-junction flexible blanket assembly with the innovative SNC SMT SPM technology, when coupled to an optimized structural platform (such as DSS's ROSA / IMBA solar array, and/or other optimized flexible blanket solar array structures) will produce revolutionary array-system-level performance in terms of high specific power, lightweight, rapid assembly and re-configurability, compact stowage volume, reliability, unparalleled modularity, adaptability, affordability, high voltage operability, adaptability to all flexible solar arrays, and rapid commercial infusion. Once successfully validated through the proposed Phase 1 and Phase 2 programs, the innovative lightweight and modular multi-junction flexible blanket technology will provide incredible performance improvements over current state-of-the-art, and will be mission-enabling for future NASA and non-NASA applications.

Primary U.S. Work Locations and Key Partners





Mission-Enabling Photovoltaic Flexible Blanket Solar Array with SNC/SJ Surface Mount Technology, Phase I Briefing Chart Image

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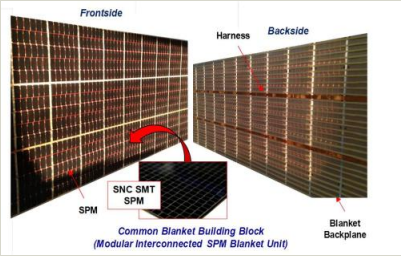
Organizations Performing Work	Role	Type	Location
Deployable Space Systems, Inc(DSS)	Lead Organization	Industry	Goleta, California
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations	
California	Ohio

Images



Briefing Chart Image
Mission-Enabling Photovoltaic Flexible Blanket Solar Array with SNC/SJ Surface Mount Technology, Phase I Briefing Chart Image *(https://techport.nasa.gov/image/129133)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Deployable Space Systems, Inc (DSS)

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

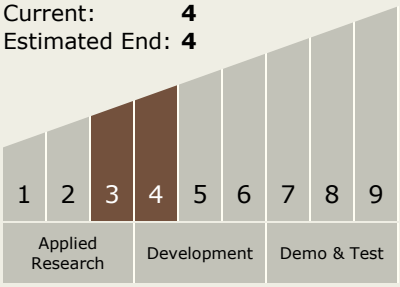
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Brian R Spence

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.1 Power Generation and Energy Conversion
    - TX03.1.1 Photovoltaic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System